

# PATENT SPECIFICATION

## DRAWINGS ATTACHED

**850,233**

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### COMPLETE SPECIFICATION

#### Improvements in or relating to Magnetic Filters for Liquids.

We, FAUDI FEINBAU G.m.b.H., Oberursel/Taunus, Germany, a Joint Stock Company organised under the laws of Germany, do hereby declare the invention, for which we  
5 pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The invention has for its object to provide  
10 a magnetic filter which will enable magnetic material in suspension to be separated from a liquid in a gas-tight filter housing, which need not be opened to remove the foreign matter separated out by the magnets. This  
15 is particularly important for fuels which are easily exploded.

Heretofore the magnets have either been withdrawn from the liquid and cleaned by  
wiping or spraying, which is very dangerous,  
20 unhygienic and time-consuming, or the magnets have been short circuited so as to free the separating space from magnetic lines of force. Also in these devices the filter box  
25 with the deposit therein has to be taken out in order to wash out the contents with the collected iron particles.

The present invention provides a magnetic filter for liquids containing magnetic material in suspension comprising a gas-tight housing enclosing a filter space and  
30 having in the top thereof one or more chambers projecting downwardly into the filter space, said chambers being of non-magnetic material and each being closed at the bottom in a gas-tight manner and open  
35 at the top to receive an assembly of magnets and pole pieces, said assemblies being capable of being withdrawn, with the pole pieces, from the chambers.

Embodiments of the invention will now be described by way of example with reference to the accompanying diagrammatic drawings in which:—

Fig. 1 shows one form of construction  
45 according to the invention in medial section

[P .]

through a single magnet assembly in operating position.

Fig. 2 shows the magnet assembly with-  
drawn. This magnet assembly is of known  
construction and consists, for example, of  
50 three permanent magnets 2 of cylindrical form, which are magnetized in the axial direction and between which lie cylindrical iron pole pieces 3. They can be held to-  
55 gether by means of a non-magnetic bolt 4 or by adhesive;

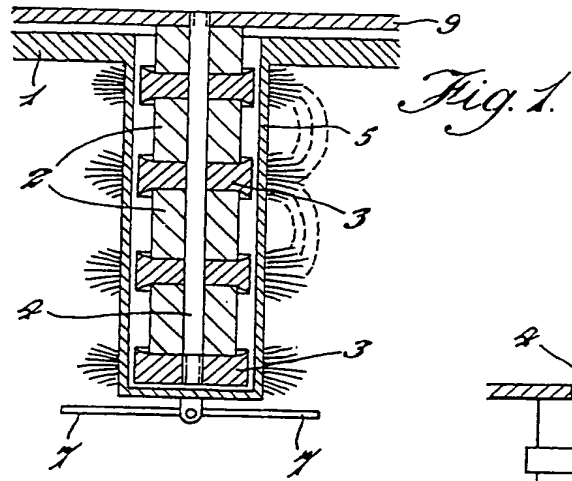
Fig. 3 shows in section along the line C-D of Fig. 4 a magnetic filter with seven such magnet assemblies, and

Fig. 4 a section on the line A-B of Fig. 3.  
The gas-tight housing is indicated gener-  
ally at 20 in Figs. 3 and 4 and is provided  
with a gas-tight cover 1. Only a fragment  
of the cover 1 is shown in Figs. 1 and 2.

These magnet assemblies may, of course,  
65 have any other cross-section, for example rectangular or oval, in order to fit the wall of the housing better or to form predetermined flow channels, or the magnets thereof  
70 may be otherwise arranged.

The magnet assemblies are secured to a  
common plate 9 and can be simply lifted out  
of the filter space, together with the plate 9,  
and re-inserted. During this operation they  
slide in chambers formed by tubes 5 which  
75 project downwardly into the filter space 10 and are of non-magnetic material and are gas-tight. These tubes 5 are closed in a gas-tight manner at the bottom and at the top  
80 are welded to the cover 1 or secured thereto in a gas-tight manner. At the bottom they may carry iron flaps 7. When the magnet assembly is in the operating position  
(Fig. 1) the flaps are drawn up into the  
horizontal position by the magnets and are  
85 held in this position and thereby substantially close the filter space 10. If the magnet assembly is drawn out, the flaps 7 fall into an oblique position (Fig. 2).

During withdrawal of the magnet assem- 90



*Fig. 2.*

